Accidental Discoveries

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Midnight Facts for Insomniacs

Podcast Transcript

(Note: transcript consists of episode outline)

Last episode was a wild ride, to say the least, and I feel like we need a palate cleanser. So I'm glad that the discord community chose a much less murdery, or to quote your tiger-sex commentary, a much less fighty-bitey topic this week. This one will probably be significantly shorter as well, with my wife out of town for a couple months I've had too much free time to go down rabbit holes and I need to rein myself in. An hour and a half of violent mutilations was excessive. It was a wave of mutilation, and not in the cool Pixies way.

So today's topic doesn't involve any blood or guts or death whatsoever, we're talking this week about accidental Inventions. Famous products that were the result of dumb luck or in some cases fortuitous ineptitude. That sounds like the most pretentious indie band ever. I feel like we probably opened for Fortuitous Ineptitude at least once or twice back in the day.

Viagra

Does the word Sildenafil ring a bell? It's probably good that it doesn't, that was kind of a trap. Sildenafil Citrate, also known by the science fiction-ish name UK-9248 was developed in 1989 by two British scientists working for Pfizer named Peter Dunn and Albert Wood. That will be funny in a second. They were researching medication for high blood pressure and angina pectoris (which is chest pain as a result of heart disease). The drug would end up being patented in 1991 by Dr. Nicholas Terret, and he soon initiated clinical trials. Unfortunately, the drug showed negligible benefit for people with heart problems. However, the demographic of people with heart problems has a tendency to overlap with the demographic of people who have problems south of the heart; many of the test subjects had previously struggled with erectile dysfunction and were surprised to find themselves experiencing long, sustained erections. When I say "Long" I mean duration-wise; I don't know if their erections were long. Some were probably modestly sized but still sustained. They were able to maintain their tiny erections for longer than normal.

You would think that test subjects might be reluctant to divulge such sensitive information, and you'd be right, but what tipped off the scientists that something strange was going on was actually the reluctance of the participants to return the leftover pills. Scientists were like, you seem very attached to these pills, they must be working for you. And the guys were like, "define *working*. The chest pain? No, that's way worse, it's excruciating, but I only notice for the few minutes between vigorous masturbation sessions and bouts of wild indiscriminate sex. 100% I'm going to die of a heart attack and/or syphilis but I will be keeping these pills, thank you very much.

The name Viagra was chosen because it supposedly evoked in people's subconscious the words "vigor" and "Niagara", which paints a graphic mental picture. Vigorous Niagara would indicate to me that ejaculation was the element that was enhanced...it sounds like a heroic flow. I don't think I want a Niagara-style climax. It's like the male version of squirting. Messy.

So I'll explain quickly how Viagra works...not that it matters to anyone taking the medication, I think most patients would continue taking it if you told them it was made of ground up penguin and that it subtracted five minutes from their lives with each milligram. There's a chemical in your body called GMP that causes engorgement, and an enzyme called PDE5 that has the opposite effect. It's a literal cock blocker. Viagra works by blocking the cock blocker. It suppresses PDE5 so that GMP can do its work. Which means that Viagra doesn't cause an erection, it just

allows an erection to occur. There's a difference. I know this from experience, I may have played with Viagra recreationally. I'm lucky enough to not have had any issues in that area but my cousin and I may have once taken Viagra before going out with some girls just to see what it would do; we ended up at a bar watching a boxing match and after an hour I was shocked that I wasn't ... exhibiting any symptoms, you might say. But then the girls showed up and yeah, that stuff works. Once you are aroused it will result in a very aggressive and insistent erection, and also minimizes the refractory period.

Viagra hit the market in 1998, and Time magazine quickly published a cover story titled "The potency pill." The cover illustration was of an older gentleman hugging his wife or partner while sneakily slipping a pill into his mouth behind her back. I don't know how I feel about sneaky erections in the context of a geriatric relationship; springing a "vigorous Niagara" on your partner after years of erectile dysfunction might not be received as warmly as you'd expect. You're assuming your wife wasn't enjoying sexual retirement. This feels like something you should discuss as a couple. The subheading on the cover was "yes, Viagra works!" because if there's anything a giant drug company like Pfizer needs, it's free publicity and the endorsement of Time magazine. the first paragraph really sums up the late 90s: "Could there be a product

more tailored to the easy-solutionloving, sexually insecure American psyche than this one? The drug, manufactured by Pfizer, went on sale three weeks ago, finally giving talkshow hosts something other than Bill Clinton and Pamela Lee to crack smarmy jokes about." Later in the article, "Already, a kind of Viagra connoisseurship is beginning to take hold. 'The hundreds are absolutely incredible," says a very satisfied user, referring to the drug's 100-mg maximum-strength dosage, "and the effect lasts through the following morning." What else can one say but Vrooom! Cheap gas, strong economy, erection pills--what a country! What a time to be alive!" 1998 was a great time to be alive, for me at least, not boner related. The iMac was released in a variety of snazzy colors, titanic came out and I went to see it on a double date and both of the women cried and neither of the guys did and it was pretty awkward, getting Jiggy with it and Iris were both big hits and those songs were great, also Britney Spears debuted Hit Me One More Time, so I take back what I said about boners not being involved. I watched her music videos frequently.

Now just to provide some important context, prior to Viagra there *were* treatments for erectile dysfunction, but all of them could be described as... unappealing, that would be a mild way of putting it. For instance, there was a gel suppository that you could insert into your urethra. There were also injectables that you could shoot directly into the base of the penis. So the treatments were...abuse, basically. CBT, if you're familiar with the term. If you're not, feel free to google it because you'll just get Cognitive Behavioral Therapy, which is a good thing, and not what we're referring to. Don't search Urban Dictionary.

Viagra was a sensation. Literally and figuratively. As the Time article notes, within the first few weeks of its release, waiting times for Viagra jumped to over a month, prompting patients to get creative. "We've been inundated with emergencies," says Dr. Ramon Perez. "Pain in the kidney. Blood in the urine. But when they get in here, they just want to ask us about Viagra. It's amazing. These people have been impotent for three years, and they cannot wait another few days." I get that he's frustrated, but I imagine when you get older there's a sense of urgency. Some of these guys were probably suffering from angina pectoris and might not have three days. They wanted to go out with a bang.

Within the first few weeks of its release, Viagra was being prescribed more than 10,000 times a day, eclipsing both Rogaine and Prozac to become the fastest selling drug in history. Amazing how two of the best selling drugs of all time address male insecurities. Baldness and flaccidity, the real healthcare emergencies. Sure we could work on curing AIDS, but who's going to solve these recedinghairline and boner problems? If you are a geneticist or biologist and want to get rich, just create a drug that makes guys feel better about getting old. That's technically Prozac too.

At the time that Viagra was released, a diagnosis of impotence usually required some actual in-person hands-on time with a urologist including blood tests etc., but all of that quickly went out the window as a result of the masses of men clamoring for the blue pill. And I'm kind of fine with streamlining the diagnostic process. I feel like if you have an erection problem, you know it. And if you're willing to admit it you're probably not lying. Not a lot of people bragging to the doctor about their flaccidity. And also, how do they test to see if you WERE lying? Show the guy some porn and see if theres a twitch?

Viagra not only inspired swelling of organs but it also reportedly inspired a swelling of male confidence. One man profiled in the Time article was, "inspired...to go out and buy a sports car not long after beginning the drug-indicating, perhaps, a soon-to-boom, Viagra-inspired market for souped-up cars...oversized stereo equipment and other accoutrements of the virile lifestyle."

Viagra resulted in a flood of older guys rejoining the dating pool. Geriatric men suddenly found themselves back on the market, confident that they would no longer disappoint their partners via inability to perform, and instead could go back to disappointing their partners via the performance itself. I'm not sure viagra was a good thing for older men on any level. I'm kind of looking forward to the day when I'm no longer a slobbering idiot who is a slave to my libido. Viagra was like medical science telling old men, "you thought you were free? Back on the leash!" Bring out the Gimp. That's how I feel sometimes. The gimp is me, and my penis is Zed.

Initially the price per pill was between eight and \$12 each. That's a lot for a single pill but also kind of not really anymore in the era of Martin Shkreli. Pfizer could have charged wav more. This is the kind of stuff that men would have gone on quests for back in the day, this was a magical elixir. "Bring me a Dragon's tooth and your firstborn child." Side effects in those early days included "headache, flushed skin, upset stomach and curious vision distortions involving the color blue." That's so random. Side effects may include violent diarrhea, bleeding from your elbows and also you'll see smurfs.

Viagra was so successful that the pope felt obligated to weigh in. "Pfizer, leaving nothing to chance, has even requested and received the Vatican's unofficial blessing for Viagra." Unofficial blessings, that's kind of shady. How does that work? The pope is like, "I'm not going on the record here, but let's just say everyone knows a flaccid man cannot enter the kingdom of heaven. It's right there in John 538: and thus the Lord has bequeathed humanity the holy gift of engorgement. And Jesus laid his hands on the sick and the lepers and lo they were cured, and then Jesus did lay his hands on the rubbery wangs of those afflicted with the evil spirit of erectile dysfunction. And like Jesus himself on the third day, their Holy Spirits did rise again."

A final word from that 1998 time magazine article, this time quoting a prediction from noted intellectual and prognosticator

Bob Guccione, publisher of Penthouse magazine, who "believes the drug will "free the American male libido" from the emasculating doings of feminists." Nailed it, Bob. If there's anything we can say conclusively about the 2000s, it's that the me-too era is a great time to be a chauvinist. Any other predictions, Nostradamus? Put all your money in crypto? Got it.

Super glue

WWII was a period of intense innovation. War is always a motivator for inventors, and many of the products that are created for military use end up being re-purposed for civilians at a later date. The substance that would become Super Glue is one such product; it was initially intended

as a transparent plastic that could be molded into gun sights for the Allies. That initial compound, known as a cyanoacrylate, was first synthesized by Dr. Harry Coover in 1942. Wikipedia says he was working for the BF goodrich company, while literally every other source including Coover himself says he was working for Eastman Kodak, and the compound was patented by Kodak so we'll consider this a reminder that Wikipedia should never be relied on as your primary source. What every source does agree on is that superglue is not a great option for gun sights; presumably after the 50th soldier got their eyeball stuck to a rifle, Coover gave up. From an interview, "My first assignment was a government contract to develop a material that you could cast gun sights... I synthesized cyanoacrylate, but the problem was everything was sticking to everything. The government canceled the contract." I imagine some government bureaucrat walking into the lab and there were beakers stuck to the walls and white rats hanging by their tails from the ceiling and scientists shuffling around attached back to back, it was just sticky chaos. So Coover turned his attention to other inventions, but a few years later he pulled cyanoacrylate out of the dustbin, this time thinking he might be able to use it as a coating to make jet airplane canopies heat resistant, because why not, if I invented a brand new substance I would just start slathering it on every surface to see what it could do. I do

like knowing that scientists are similar to comedians in that if something doesn't work, we hold onto it and bust it out every few years so that we can fail with it again. I have this joke about voodoo dolls that has never really hit but I'm going to make it work someday dammit. It's about how voodoo dolls are proof that humanity is terrible, it's a very cynical joke. Because the whole idea with a voodoo doll is that you create an avatar of a person, and anything you do to that little doll will happen to the person. And no one in the history of the universe has made a voodoo doll of a person and just given it a nice relaxing massage. Or performed oral sex on it or whatever. What do we do instead? We break its legs, we stick it with needles. Humans are terrible. There's no punchline, maybe that's the problem. Anyway, what I'm taking from this episode is that comedians are exactly like scientists. I'm a doctor of laughs. But in all seriousness it's a little bit unsettling to know that the scientific process often consists of just winging it. That makes me feel really optimistic about humanity's future. So the jet canopy idea was a bust, but another scientist working on the project named Fred Joyner was like hey, maybe this adhesive quality is a feature rather than a bug. Kodak Eastman began manufacturing the product under the name "Eastman 910" (the name 910 was chosen because you could apply it to a pair of items and then count 12345678910 and the two items would be bonded.

Not sure why he chose the last two digits specifically. He could've called it Eastman 123, but whatever.) In 1958 the name was changed to the slightly more catchy "superglue" and the product hit the shelves with a big boost from a landmark TV moment when Coover appeared on the show "I've got a secret" in 1958. This was a show hosted by Garry Moore in which panelists tried to figure out a guest's secret. I would immediately always guess felon. My wife watches a lot of true crime, I suspect everyone. They would walk out on stage and I would be like murderer.

I watched an episode of this show and it was amazing, it was so 1950s. the host smoked a cigarette through the entire episode, like he got up and walked around and chatted with guests while puffing away. It's bizarre. So Coover went on the show and his secret was that he could bond two pieces of metal together and they would be strong enough to hold up the host using only a single drop of super glue. It worked, apparently. I couldn't find that particular episode and I'm really curious as to whether Gary Moorre let go of the cigarette or clutched it while he was hauled up in the air.

Thanks to its (occasionally annoying) ability to adhere to skin, which you are no doubt familiar with if you've ever tried to casually use this stuff in your daily life, super glue can be used to close wounds; in the Vietnam war a

spray-on version was used to stop bleeding until a soldier could be transported to the hospital. It wasn't approved for use in America until 1998, with the introduction of Durabond, but as we know the military gives zero F's about FDA approval when it comes to experimenting on soldiers overseas. When Durabond is used to join skin tissue, the stickiness will usually wear off after a few days. So if you passed out in a frat house and your buddies pulled a prank, don't worry, your butt cheeks will separate by the end of the week. Superglue is an incredibly versatile substance, I remember I once used it to repair a bong in high school. Superglue, saving lives and killing brain cells, Dr. Coover would be proud.

Some other miraculous uses: in cosmetology it can be used as a nail adhesive at nail salons, and also as an eyelash adhesive. From Wikipedia, he's super glue bottle is sometimes mistaken for <u>eye drops</u> causing accidental injury." You can't always trust Wikipedia, but this rings true. I'm generally inclined to believe any story of human stupidity.

The substance is also unique in that it bonds best when only a small amount is used, you don't want to pile this stuff on like you would with Elmers. It's an equation of diminishing returns, so if you're spreading Superglue on your ex boyfriend's toilet seat or whatever, use just a thin layer. And also don't do that. But if you do, it doesn't take much. But don't do that. Unless he's a real jerk. Still probably don't, you can't see me winking.

Slinky

Some of these inventions kind of weren't inventions at all. For instance, our next segment involves a guy who took an existing piece of machinery and simply used it for a different purpose and the world decided to call it an invention. This is honestly my favorite version of product-creation. I like inventions that don't require any inventing, because that part seems like a lot of work. I just want to find a household product and paint it a different color and sell it for five times as much with a new name. Like did you know you can use an air fryer to dry your shorts? I present Shane's shorts dryer, \$499 on my website, visit definitelynotanairfryer.com So here's a quote from the 1947

So here's a quote from the 1947 patent application for a product called slinky: "a helical spring toy which will walk on an amusement platform such as an inclined plane or set of steps from a starting point to successive lower landing points without application of external force beyond the starting force and the action of gravity."

They could have just said "it's a spring." That was a fancy way to describe things that a spring can do. I don't think it's fair to say that Richard T. James discovered or invented a spring, but he *was* smart enough to repurpose a. I'm on industrial factory item for kids to use. A great idea, BTW. What could go wrong? We should repurpose all of our factory machinery for children. Here kids, play with this welding torch.

The idea for the slinky came to James in 1943, when he was designing mounts that could be used to stabilize sensitive instruments on a rocking boat. He dropped a spring and it did the classic slinky walk down some books and off a table, and he had his aha moment. James did do some experimenting to figure out the optimal size and materials for the coils, and he determined that the best design was a stack of blu-black carbon Swedish steel wire 2 1/2 inches tall and comprised of 98 coils. A slinky is 87 feet long if stretched out fully. The name slinky was chosen by his wife Betty, who searched the dictionary for the perfect word that would encapsulate the product's unique motion.

The slinky's big break came in 1945 when Richard and Betty gave a demonstration at Gimbals department store in Philadelphia. They had manufactured 400 of the slinkies and priced them at a dollar each. That seems cheap now but in the 1940s a dollar for a goddamn metal spring seems crazy.

I checked an inflation calculator and that would be around \$13 today. Hell no. To be fair, the price would remain in that range for years and Betty would work hard to keep the slinky affordable, later saying, "So many children can't have expensive toys, and I feel a real obligation to them. I'm appalled when I go Christmas shopping and \$60 to \$80 for a toy is nothing." Richard and Betty were so concerned that they wouldn't sell any slinkies and it would be a dud that they reportedly gave a friend a dollar to walk in and buy one. At first there wasn't much interest and it looked like their worst fears would come true but then Richard gave the demonstration, and when the public witnessed the slinky slinking around in all its slinkiness, the 400 units sold out within two hours.

Richard was soon able to get the slinky mass produced and began promoting the toy on various TV shows. He opened a slinky shop in Albany New York. what a thrilling retail experience that must've been. A store that exclusively sells metal coils. I'm going to open a triangle store next door. We sell musical triangles, and also other triangle-adjacent products like flags for golf holes. Drafting compass. Tortilla chips. Other triangular items.

In 1960 the newly-wealthy Richard joined a Christian cult and bailed on his family to become a missionary in Bolivia. At that point Betty, a nowsingle mother with six kids, took the reins of the company and ran with them. In 1963 she mortgaged her house, relocated the company to Pennsylvania, and launched an iconic marketing campaign that rekindled interest in the slinky. She would head the company for 38 years and passed away in 2008 of congestive heart failure at the ripe old age of 90. Presumably her six kids are all pretty well off. It's so weird that you can get rich off of something so trivial and silly, and even weirder that you can get rich just from being the kid or grandkid of someone who invented something so trivial and silly. 16 years old driving a Benz because you've got all that slinky money.

So in case you're wondering, the walking motion of a slinky is the result of two principles of physics: Hookes law and-obviously-gravitational forces. It's all about compression waves, and the way that potential energy is stored and released. From a linked article describing slinky physics: "The physical properties of the slinky determine how quickly it moves under the influence of gravity. Although its movement may look simple, from a scientific point of view the motion is quite complex. As the slinky moves down the steps, energy is transferred along its length in a longitudinal or compressional wave, which resembles a sound wave that travels through a substance by transferring a pulse of energy to the next molecule. How quickly the wave moves depends on the spring constant and the mass of the metal. Other factors, such as the length of the slinky, the diameter of the coils and the height of the step must be considered to completely understand why a slinky moves as it does." And that's as far as we're going to go into

slinky physics. I don't want this podcast to turn into an actual cure for insomnia. We're supposed to be insomniacs, not putting people to sleep.

The slinky company didn't just stop with a spring. They also made some brilliant strategic moves, like for instance attaching the spring to other items and then selling those items. Genius! Like the famous slinky dog from toy story, a wiener dog in which the belly is a slinky. Also the *giant* slinky, which is basically the same as a regular slinky but with a clever twist: it's...large.

The slinky was inducted into the National Toy Hall of Fame in 2000, and I was today years old when I found out that toys could qualify for a Hall of Fame, and that one of those toys is a spring. By that time the slinky had already sold over 250 million, translating to billions in revenue.

The toy has even been to space. "Astronaut Margaret Rhea Seddon demonstrated the <u>Slinky's behavior in</u> <u>zero gravity</u> during a telecast from the Discovery Space Shuttle in 1985. ''It won't slink at all,'' Seddon said in the telecast. ''It sort of droops.'' Sad space slinky.

It wasn't until I was doing research for this episode and listened to the classic vintage ad for slinky that I realized the Ren & Stimpy connection. The famously psychedelic Ren & Stimpy

cartoon had a running gag in which they mocked the idea of toys made out of random household items, and the bit included an insult aimed at kids by pointing out how dumb and easily entertained they are via a fake advertisement for a toy called "log. " The toy is a log, just that. I knew that the ad for log was mocking toys like slinkies and pet rocks, but I didn't realize that the cartoon just straight up stole the song, and the reason they did was because the slinky ad is apparently the longest running jingle ad in history. It was recorded in 1962. Play clips

Velcro

So the terms biomimicry or biomimetics refer to the process by which scientific inventions can be modeled off of natural phenomena. Scientists might observe the way an animal's fur insulates it from the cold and then they seek to recreate the phenomenon with synthetic materials. And that's the case with our next invention.

When Swiss engineer George de Mestral returned from a hunting trip through the alps in 1941 he found tiny burrs attached to his clothes and his dog's fur. Examining them through a microscope he observed that the burrs were covered with tiny hooks that had attached to the threads of his clothing. The burrs could be pulled off and easily reattached...nature had created a simple, reusable loop and fastener system. Now, loops and hooks have

been used as fasteners for generations but they were always large and unwieldy, you had to connect each loop and hook one by one. But the system he now envisioned would consist of thousands of microscopic loops and hooks that would attach to each other indiscriminately and randomly so that two surfaces could be joined simply by pressing them together from any angle. This is a fabric technology that could never have been created with standard organic materials like cotton etc., but Mestral had his idea at exactly the perfect time, because the recent invention of nylon and synthetic fabrics meant that his vision was now achievable. Eventually. It took him a decade to create a manufacturing process that achieved the desired results. This guy was super dedicated to hooks and loops. According to the Velcro website, de Mestral patented the invention in 1954, though on an episode of the David Letterman show a representative from the Velcro corporation weirdly contradicted their own timeline. But whatever. This was the episode in which Dave was completely covered head to toe in Velcro and jumped off a trampoline onto a Velcro wall and stuck there. At the time the Velcro corporation was very specific about Velcro gendering as well. Play clip. "one grabs the other and sticks." Alright. I feel like we're back in the tiger-vining segment of Sigfried and Roy. I didn't know Velcro was so rapey.

So Velcro was hailed as the "zipperless zipper" however, it didn't exactly take the fashion world by storm. Big strips of plastic aren't exact the most appealing accessory on your outfit. It wouldn't be until NASA discovered the benefits of Velcro that the product really took off. Velcro offered an easy way to get in and out of bulky space suits. Plus, In space, you need a method for quickly securing items to the wall and floor in zero gravity (if there's even such a thing as wall and floor) in zero g. Somehow the patent expired in 1978, that's a short patent, and that's when Velcro really took off, aided by a flood of cheap knockoffs from Asia.

As to the actual functionality of Velcro, the strength of the bond depends on which type of material has been used in manufacturing process—teflon and polyester are particularly strong—and also the density and size of of loops and fasteners as well as the smoothness of the surface to which the Velcro is attached. If the surface is rigid and smooth, you're going to get a really secure bond, because the force is distributed evenly and pulling at one area potentially pushes other areas more tightly together.

If you've ever watched any videos of Velcro close up, then you might want to reevaluate what you do in your free time, the videos are actually pretty creepy. Velcro up close looks very alien and kind of alive, it's like a dense mop of hair being physically yanked away from a surface that is packed with hungry, gripping talons. like a forest of long spiderlike tendrils that are being clutched and stretched as they're grasped by tiny fingerlike hooks. And the sound that velcro makes up close, this crackling snapping sound, It's highly unpleasant. There are long videos on YouTube, clearly this is someone's fetish, it's like ASMR but the Chinese water-torture version. you could not meditate or fall asleep to this sound.

Matchsticks

This next invention was the most surprising, not necessarily to us but more to the guy who accidentally found himself with a handful of fire. So for some backstory, we live in a world that is rich with heat and light. For millennia before the modern era, the only source of light and heat at night was flame, and primitive humans dreamed of generating fire on demand. If you've ever tried to pull an Eagle Scout maneuver by starting fire with a couple pieces of wood and some dry grass via friction, you know that it's a lot harder than it looks. The only other option was using a spyglass and sunlight, but obviously that had to be accomplished during a sunny day when the generation of heat and light most likely wouldn't have been quite so urgent.

Now, there have been versions of matches for years, but most of them were fire-*transfer* systems rather than fire generators. Obviously it's a lot easier to create fire if you already have fire. Fire is among the sluttiest of

chemical reactions, it likes to spread itself around and will eagerly jump from location to location if given the opportunity. And btw it's impossible to slut shame an inanimate chemical reactions to save your emails. In the year 950, Chinese author Tao Gu wrote "If there occurs an emergency at night it may take some time to make a light to light a lamp. But an ingenious man devised the system of impregnating little sticks of pinewood with sulfur and storing them ready for use. At the slightest touch of fire, they burst into flame...This marvelous thing was formerly called a "light-bringing slave", but afterward when it became an article of commerce its name was changed to 'fire inch-stick'." That's a strategic rebranding for you. "Light bringing slave" probably wouldn't test well in the 2000s.

So yeah, the fire inch-stick technically would qualify as a matchstick but isn't super useful considering you need to have pre-existing fire in order to create a new fire. Fire is kind of like money, it's a hell of a lot easier to make money if you're starting with a bunch of money. If you're wearing a barrel with suspenders and you don't even have a bank account, good luck getting a job interview.

Various versions of "chemical matches" were created in the early 19th century but they were more like handheld torches that required the introduction of additional chemicals to create flame. For instance the socalled "self-igniting match" first invented by French academic Jean Chancel. To light one, you dipped it in an asbestos bottle filled with sulfuric acid; I have no idea why this didn't go mainstream. It probably never resulted in unspeakable tragedy.

There were a couple of other inventions that almost anticipated the Strikeable match by using friction to initiate the chemical reaction, such as the briquette phosphorique, developed by François Derosne in 1816. The match had a sulfur tip and you would scrape it vigorously against the inside of a tube coated with phosphorus. Wikipedia describes this as both "inconvenient and unsafe." The first modern, safe, practical, strikeable matchstick was invented in 1826 in England by a British druggist from Stockton-on. Tees in the county of Durham. That sounds like white trash Shakespeare. I live in Stockton on tees, It's right next to upper Fresno by turtleneck.

So John walker was an aspiring surgeon who might have made great strides in the field of medicine if he had been able to stand the sight of blood. He was described as having left the profession due to "an aversion to surgical operations." so he's basically a normal human. Most of us have an aversion to surgical operations. If you want to be a doctor you just have to beat that aversion into numbness via the process of desensitization. Expose yourself to enough blood, you'll get over your fear of blood. Or you'll be like one of those goats and just faint every five minutes.

John Walker is the most American British name ever btw. Sounds like a British cowboy: John walker, outlaw, terror of the Cotswalds

Now when I say this was an accidental invention, I may be overselling it a bit: Walker was definitely trying to invent some type of fire stick. He just didn't realize he had succeeded until he dipped a match in one of his experimental lighting mixtures and then accidentally scraped it against the hearth, and it burst into flame. The biggest surprise-other than sudden scorching flame. that was probably surprising—was that the mixture could be ignited with simple friction, and as a bonus was economical and safe. The final version would consist of a strip of cardboard coated in sulphur tipped with gum, chlorite of potash, and sulphide of antimony. Speaking of phrases that sound British, those are like an honorific . Please stand for baron potash the third, chlorite of wibble-snibble, sulfide of antimony. Father to a murdered son, husband to a murdered wife.

So John Walker dubbed his invention "friction lights" and sold them 50 for a shilling. I don't know if that's a good price, in my head that's the same as a billion ducats or 50,000 wampum, I know nothing about foreign or vintage currency. I don't really know anything about modern American currency either, just look at my bank account.

So we've talked about scientists who invented accidental products, but how about an accidental color? 18-year old aspiring chemist William Perkins was attending the Royal College of London in 1856 with the goal of curing malaria. At the time the primary treatment for malaria was a naturally occurring substance called quinine, made from the bark of the Peruvian cinchona tree. As you can imagine, it wasn't easy to procure and there was a massive worldwide shortage. So Perkins was attempting to synthesize artificial quinine, and while he was unsuccessful in synthesizing a cure for malaria, by manipulating a carbon-rich tar made from distilled coal he did synthesize a sludgy purple substance with a rotten fish odor that couldn't cure any diseases but could 100% poison anyone stupid enough to ingest it. So close. But you know the famous saying, if life gives you purple lemons, make purple pants.

Perkins had accidentally created the first synthetic Aniline clothing-dye, and at the perfect time, because in 1859 purple was in fashion. It was the color of royalty and had classically been derived from expensive mollusk ink, so it was considered sumptuous and regal. For the next three years the color Perkins would dub "mauve" became a sensation. He dropped out of school and his dad financed a factory dedicated to making purple items. The dye had the benefit of not washing out, it was eternal purple. Other colors were soon synthesized by Perkins, and competitors quickly

appeared, resulting in "aniline red (magenta, fuchsia), aniline blue, Hofman's violet, and a fast aniline black." Incidentally artificial quinine *was* eventually synthesized, but let's celebrate the real triumph here, brightly colored clothing.

Play-Doh

We'll end with a nostalgic one. So Play-Doh was not invented to play with, unless your definition of play includes doing chores, which seems kind of like the opposite of playing. Also, now that the Simpsons exists I can't look at the way Play-Doh is spelled—p-l-a-y-d-o-h without seeing it as play DOH!

So, much like the slinky, this was less of an accidental invention as it was an intentional repurposing. The manufacturer of what would become Play-Doh was a soap company in Cincinnati called Kutol, headed by Noah McVicker, and the product was originally developed as a cleaning tool to remove coal stains from wallpaper. Pre-World War II, people used coal to heat their houses, which left soot stains on their walls and also on their lungs. I'm glad we don't live in the era of coal stoves. Even back then people knew that the whole coal stove thing was not ideal, so as soon as other options became available, coal was phased out, along with the need for a putty-like substance that that you could rub all over your walls. Facing bankruptcy, the Kutol company had to pivot. Noah brought in his nephew

Joseph McVicker to help with the turnaround, and Joe quickly learned that his sister-in-law, a schoolteacher named Kay Zufall, had been using the wallpaper-cleaning product as a toy in her classroom. Kay encouraged the McVickers to go all in on the product as a moldable clay for children. Kay even came up with the name; Joseph and Noah had planned to call it Rainbow Modeling Compound. Less fun. "Come on kids, let's manipulate chunks of modeling compound! Then we can utilize interlocking blocks of plastic as construction implements. Why are you crying?" The McVickers founded the Rainbow Crafts Company in 1956 with the sole purpose of manufacturing 1.5-pound boxes of their moldable clay, and Play-DOH! was born. Initially it was only produced in a single color: off-white. Gallon cans in red, yellow, and blue quickly followed. The mcVickers were worried about the smell of the product-it apparently had a chemical odor-so they added almond extract to create the product's signature scent, which to me smells a lot like chemicals. I'm not sure why the clay smelled like chemicals in the first place considering the primary ingredients are flour, water, salt, boric acid, and mineral oil, but I've never liked the smell of Play-Doh. In 1956 the company demonstrated Play-Doh at an educational

convention, giving the product a giant boost. In the mid 50s the company introduced Play-Doh pixie, their elflike mascot, who was later replaced by Play-Doh Pete, a mascot who would last for 42 years. The current mascots are the Doh-Dohs, two anthropomorphic cans of Play-Doh with legs and arms, they're pretty creepy. General Mills purchased the rainbow craft company in 1965. Ads on popular kids shows like romper room and captain kangaroo also helped

popularize the product. after changing hands a couple more times Hasbro purchased Play-Doh in 1991 and owns it to this day.

We have new Minions!









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